

Chemical Designation

PA 66 (Polyamide 66)

Colour

ivory opaque

Density

1.15 g/cm³

Data generated directly after machining (standard climate Germany).

Main features

- good slide and wear properties
- electrically insulating
- good wear properties
- high strength
- good weldable and bondable
- resistant to many oils, greases and fuels
- high toughness

Target Industries

- mechanical engineering
- aircraft and aerospace technology
- electronics
- food technology
- automotive industry

Mechanical properties	parameter	value	unit	norm	comment
Tensile strength	50mm/min	85	MPa	DIN EN ISO 527-2	(1) For tensile test: specimen type 1b
Modulus of elasticity (tensile test)	1mm/min	3500	MPa	DIN EN ISO 527-2	1) (2) For flexural test: support span 64mm, norm specimen.
Tensile strength at yield	50mm/min	84	MPa	DIN EN ISO 527-2	(3) Specimen 10x10x10mm
Elongation at yield (tensile test)	50mm/min	7	%	DIN EN ISO 527-2	(4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression.
Elongation at break (tensile test)	50mm/min	70	%	DIN EN ISO 527-2	(5) For Charpy test: support span 64mm, norm specimen.
Flexural strength	2mm/min, 10 N	110	MPa	DIN EN ISO 178	2) n.b. = not broken
Modulus of elasticity (flexural test)	2mm/min, 10 N	3100	MPa	DIN EN ISO 178	
Compression strength	1% / 2% / 5% 5mm/min, 10 N	20/35/81	MPa	EN ISO 604	3)
Compression modulus	5mm/min, 10 N	2700	MPa	EN ISO 604	4)
Impact strength (Charpy)	max. 7.5J	n.b.	kJ/m ²	DIN EN ISO 179-1eU	5)
Notched impact strength (Charpy)	max. 7.5J	5	kJ/m ²	DIN EN ISO 179-1eA	
Shore hardness	D	82		DIN EN ISO 868	
Thermal properties	parameter	value	unit	norm	comment
Glass transition temperature		47	°C	DIN EN ISO 11357	1) (1) Found in public sources.
Melting temperature		258	°C	DIN EN ISO 11357	(2) Found in public sources.
Service temperature	short term	170	°C		2) Individual testing regarding application conditions is mandatory.
Service temperature	long term	100	°C		
Thermal expansion (CLTE)	23-60°C, long.	11	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	23-100°C, long.	12	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Specific heat		1.5	J/(g*K)	ISO 22007-4:2008	
Thermal conductivity		0.36	W/(K*m)	ISO 22007-4:2008	
Electrical properties	parameter	value	unit	norm	comment
surface resistivity		10 ¹⁴	Ω	-	
volume resistivity		10 ¹⁴	Ω	-	
Other properties	parameter	value	unit	norm	comment
Water absorption	24h / 96h (23°C)	0.2 / 0.4	%	DIN EN ISO 62	1) (1) Ø ca. 50mm, h=13mm
Resistance to hot water/ bases		(+)		-	2) (2) (+) limited resistance
Resistance to weathering		-		-	3) (3) - poor resistance
Flammability (UL94)	corresponding to	HB		DIN IEC 60695-11-10;	4) (4) Corresponding means no listing at UL (yellow card). The information might be taken from resin, stock shape or estimation. Individual testing regarding application conditions is mandatory.

